



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

### Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

### About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

Chesapeake and Ohio railroad company.

Central trunk line to the West.  
January 1870.



365.0973  
C523cc

Central Trunk Line to the West.

A STATEMENT SHOWING THE SUPERIORITY OF THE

*OK.*  
**Chesapeake & Ohio Railroad**

As a Short, Constant and Economical Line of Communication

BETWEEN THE

**Atlantic Seaboard Cities**

AND THOSE OF THE

Ohio and Mississippi Valleys and the Pacific Coast.

With an Account of the Present Condition and Prospects of the Enterprise.

JANUARY, 1870.

Published for the Chesapeake & Ohio R. R. Co. by

**FISK & HATCH,**  
**BANKERS,**

No. 5 Nassau Street, New York.

# Chesapeake & Ohio Rail Road Co.

---

## OFFICERS AND DIRECTORS.

### PRESIDENT,

C. P. HUNTINGTON,

*New York.*

### VICE-PRESIDENT,

HON. WILLIAMS C. WICKHAM,

*Richmond.*

### TREASURER AND SECRETARY.

JAMES J. TRACY,

*New York.*

### COUNSELORS.

JAMES H. STORRS, HON. JOHN B. BALDWIN,  
*New York.* *Virginia.*

### CHIEF ENGINEER.

H. D. WHITCOMB.

## DIRECTORS.

C. P. HUNTINGTON,  
*New York.*

A. A. LOW,  
*New York.*

WM. H. ASPINWALL,  
*New York.*

PLINY FISK,  
*Philadelphia.*

DAVID STEWART,  
*New York.*

JONAS G. CLARK,  
*New York.*

WM. B. HATCH,  
*New York.*

H. CHESTER PARSONS,  
*Winfield, W. Virginia.*

JOHN ECHOLS,  
*Staunton, Va.*

WM. C. WICKHAM,  
*Richmond.*

JOSEPH R. ANDERSON,  
*Richmond.*

**Central Trunk Line to the West.**

---

A STATEMENT SHOWING THE SUPERIORITY OF THE

# **Chesapeake & Ohio Railroad**

As a Short, Constant and Economical Line of Communication

BETWEEN THE-

## **Atlantic Seaboard Cities**

AND THOSE OF THE

**Ohio and Mississippi Valleys and the Pacific Coasts,**

With an Account of the Present Condition and Prospects of the Enterprise.

**STANFORD, L. C. & CO.**

JANUARY, 1870.

---

Published for the Chesapeake & Ohio Railroad Company, by

**FISK & HATCH,  
BANKERS,**

**No. 5 Nassau Street, New York.**

**361145**

УКАЗАНИЯ ПО ОПЫТНОМ  
ИСПЫТАНИЮ АВТОМАТА

# Central Trunk Line to the West.

## CHESAPEAKE & OHIO RAILROAD.

---

The bulk of the traffic and travel of the United States is moved upon East and West lines. The course of settlement and of trade sets steadily and strongly from the Atlantic coast to that of the Pacific. The Alleghany, or Appalachian, chain of mountains, stretching obliquely across the country, sharply divides the Mississippi basin from the Atlantic seaboard—the great field of production from the great centres of commerce and consumption.

Within the memory of those now living the only communication across this elevated range was by means of the buffalo trail, or the bridle-path of the Aborigines. The transportation of bulky products from one slope to the other was not attempted. The region lying north of the Ohio and east of the Missouri rivers was, at the beginning of the century, little more than an uninhabited wilderness, with barely a few scattered settlements and military outposts. The means of communication, apart from the navigable rivers, consisted of the most primitive roads, and the principal articles of commerce were the products of the hunter.

Within that same area are now comprised eight magnificent States, with an aggregate population exceeding twelve millions, whose annual products are estimated at thousands of millions; which contain nearly 20,000 miles of railroads, and whose freight carried by railroad alone, in 1867 exceeded twenty-one millions of tons, the value of which is estimated at over three thousand millions of dollars. The territory has grown in less than the life of man from a vast hunting ground to the strength and wealth of an empire. The development of the great Central Basin formed by the valleys of the Ohio and upper Mississippi rivers and their tributaries, has been more rapid than that of any other section of our Union,

and offers, indeed, a spectacle of industrial and social advancement without equal in the history of the human race.

The Alleghany chain no longer remains an obstacle to the free passage between the ports of the sea and the fertile prairies in the Great Valley of the interior. Human ingenuity has devised a new and marvelous system of land-transport, far transcending the power inhering in the muscles of beasts of burden. The locomotive now rushes along its path, spanning the deep ravine, and piercing the rocky crest, with surpassing strength and with the speed of the wind.

#### *Communication between Seaboard and Inland States.*

After long years of agitation and ten years of labor and expenditure, there was completed in 1825, an imperfect, though useful, means of communication between the upper waters of the Hudson river and the Great Lakes, by an artificial water line; thus flanking the northern limit of the mountain range, and giving access to the territory bordering on the North-Western Lakes.

This, besides being available for but little more than half the year, by reason of the rigorous climate, was found to be unsuited to any but the bulkier products, and was at all times tedious and unreliable. Fortunately, at this juncture the successful application of the steam-engine to the railroad introduced a new element into the problem of transportation, and at once widened the area within which the products of inhabited countries could be exchanged with mutual advantage.

Engineering Science, catching a hint from Nature, sought in the courses of the streams, or at the bottoms of former seas, for the true lines of communication. The streams, which for unnumbered ages have been washing the mountains into the plains, furnished the surest, and generally the most direct path across the mountain summits. The valleys of the Mohawk, the Susquehannah, the Delaware, the Potomac and the James were simultaneously and eagerly traced to the water-shed, which separated them from the Ohio system, for practicable canal lines. This problem engaged, for many years, the attention of WASHINGTON himself, in an attempt to unite the waters of the Chesapeake with those of the Ohio. But the engineering skill and the national resources of that day were hardly equal to the stupendous task of carrying a canal over a chain of mountains, whose lowest passes

were two thousand feet above tide-water. What was impracticable for the water line, was found to be of the greatest service to the railroad. The rails were first carried to the Lakes by the same circuitous route as the practicable canal. Then followed a railroad line in Pennsylvania, which was designed to unite two fragments of canal, separated by the main ridge of the Alleghanies. The railroad link soon swallowed the canals, leaving to them only the least important part of the transportation. The advantages of railroads over canals soon became apparent. In the Ohio Valley and beyond, the canal projects were abandoned, and the energies of the people were directed toward the construction of railroads. The result was, that by the time the third trans-Alleghany line had been carried from the seaboard to the Ohio river, by the Maryland route, following the Potomac, the West had built with astonishing rapidity a vast system of railroad communications, exceeding in aggregate length that of the seaboard States, and equalling that of the lines of Great Britain.

#### *The Virginia Line to the West.*

By the very nature of things, the essential conditions for a practicable railway route do not exist at all points along the Alleghany range, but are found only at rare intervals, where the general course is so direct, and the descent of the streams so gradual as to be available for grades, upon which our machinery may be safely operated. The number of such passes is necessarily limited. Out of innumerable explorations, four only have been brought into use between the Ohio valley and the seaboard, and these are found at distances averaging more than one hundred miles apart. In addition to that mentioned, in Pennsylvania, and the one in Maryland, a third has been carried across the northern portion of New York, passing over into northern and western Ohio, without, however, touching any considerable city or point of river navigation until Cincinnati is reached, by a line of 860 miles.

The fourth, and the one, on the whole, combining the most favorable features, is that following the waters of the James to their sources, and thence down the tributaries of the Kanawha Branch to the Ohio. This route is one which has not of late years, from its isolation during the clouds of war, received the attention it deserves, but has at last pressed itself into public notice by

the enterprise and weight of the Chesapeake & Ohio Railroad Company, in whose hands the franchise of the whole line between the tide water of Virginia and the Kentucky shores of the Ohio is now vested.

Through the superior force and energy incident to the free labor system of the North, the more difficult and costly routes referred to were pushed to successful completion. Now that slavery is extinguished, and Virginia is thrown open to the same energy and self-reliant private enterprise which have conquered so much greater difficulties farther north, her superior and comparatively easy route invites eager attention, and is at once seized upon.

The superiority of the route covering the valleys of the James and Kanahwa streams was pointed out more than twenty-five years ago. The celebrated Civil Engineer Charles Ellet, in his surveys for a canal line, established its advantages of minimum elevation, directness, and easy gradients over any of the known passes. Indeed, its general features were long ago recognized, since it was followed by the pioneers, and the military expeditions of the early settlers against the Indians and the French; and in later years, the turnpike forming the great highway to Kentucky and the Southwest was constructed on substantially the same line. Henry Clay and his colleagues in Congress from the southwest, were accustomed to ride over this same route to and from Washington City before the days of railroads, and the houses at which they rested or slept on the journey are still pointed out.

The aid of the State of Virginia was invoked during the period from 1824 to 1845, and with the aid of private capital, after ten years of exertion and the expenditure of more than ten millions in money, a canal was carried nearly two hundred miles up the valley of the James, when the outbreak of the war put an end to the stupendous work. It would require to complete it to the Kanahwa, an expenditure variously estimated at from forty to eighty millions of dollars, and involve, beside three thousand feet of additional lockage-lift, a tunnel through the summit of the Alleghanies nine miles in length. Such is the demand for new outlets to the seaboard that even this enterprise has recently received much attention. Such a work may, indeed, be prosecuted if the means are provided, and in the course of ten years might be completed. The growing commerce and the spirit of the age, however, demand the Railroad at once.

### *The Chesapeake and Ohio Railroad.*

San Francisco, St. Louis, Louisville, Cincinnati and Richmond are situated on nearly the same parallel of latitude, and are within the most favorable belt of temperate climate which spans the North American Continent. The Bay of San Francisco, on the western coast, and the Chesapeake Bay, on the Atlantic coast, have no equals as harbors for safety of approach, depth of water, or freedom from the rigors of winter. The shortest practicable railroad line from San Francisco and Salt Lake to the navigable waters of the Atlantic is that passing through these great inland cities, and reaching the waters of the Chesapeake by the route of the Chesapeake and Ohio Railroad. This line, besides being the most direct, is also that where the grades are the most uniform, where fuel is abundant, and where the climate is most favorable to its constant operation.

The CHESAPEAKE & OHIO RAILROAD is the result of a consolidation of the VIRGINIA CENTRAL RAILROAD with the COVINGTON & OHIO RAILROAD, authorized by the Legislatures of Virginia and West Virginia, in 1866, to build, control and operate as a continuous line, the road extending from the James River to the northeastern corner of the State of Kentucky, a distance of about four hundred and twenty-seven miles, and several important branches thereof. Authority is also granted to unite and consolidate with the lines on the south side of the James River connecting Lynchburg and Richmond to Norfolk.

The VIRGINIA CENTRAL RAILROAD had its origin in the Charter granted in 1836, designed to carry a line from Hanover Court House, through the counties lying to the westward, under the title of the "*Louisa Railroad*." It was extended from time to time, in accordance with an enlarged plan, and as fast as means could be raised therefor. Like most of the great internal improvements of Virginia, it was constructed upon the "three-fifths" plan ; that is, the State subscribed to three-fifths the amount of the Capital Stock, the proxy of the State being held by an officer appointed by the Governor.

The importance of a line to the great West, and of the advantages of the James River and Kanawha route for railroad purposes, became more and more apparent, and in 1848, the Company severed its connection with the Fredericksburg line, of which it

had been merely a feeder, established an independent line to the docks in Richmond, and began to push westward to the Piedmont country.

The State had meanwhile begun the construction of the remarkable tunnel through the crest of the Blue Ridge, 4,000 feet in length. This work, together with a few miles of the line on either side, was leased (with the right of purchase on most advantageous terms,) to the Virginia Central Company, and incorporated as part of their line. From Richmond to Gordonsville, where it connects with the Orange and Alexandria Railroad, and thence to Charlottesville, the line was of light grades and comparatively easy construction. From the latter point to Staunton, in the valley of Virginia, the work was heavy and expensive, the greater portion being borne by the State. From Staunton to Jackson's river, across the North mountain, the work was much less expensive. This portion was completed just as the war broke out, and effected a reentrance to the James river valley by a more direct and practicable route than by following the course of the canal through Lynchburg. At Jackson's river, the progress of the line was arrested until 1867, when ten miles additional were built, bringing the line to Covington, 205 miles distant from Richmond.

***Consolidation of the Virginia Central with the  
Covington & Ohio Railroad.***

In the meantime the State of Virginia had constituted its Board of Public Works, a corporation under the title of the *Covington and Ohio Railroad Company*, with authority to construct the line between Covington and the mouth of the Big Sandy tributary of the Ohio, with a branch to the mouth of the Kanawha, appropriating ten millions for the work. The surveys were carried on and the work begun at several points along the line ; and at the outbreak of the war, which put an end to the appropriations, \$3,213,194, gold value, had been expended upon the road. Most of this expenditure was upon tunnelling and excavation which would not suffer appreciably by the lapse of time. The separation of West Virginia carried with it the public works belonging to the parent State, and during the war the Board of Public Works of West Virginia held control of the franchises and the property of the

Covington and Ohio Railroad Company within her boundaries. In 1866, however, the consent of both States was received to consolidate the interests of the two corporations, under the title of the CHESAPEAKE & OHIO RAILROAD COMPANY, and the authority therefor granted by Statutes, whereof the enacting clauses of both are nearly identical. By this legislation the interest and property of the States, and the work done between Covington and the Big Sandy were transferred to the Corporation, on condition that the line should be completed to the Ohio.

The eastern portion of the Covington and Ohio line was by far the most difficult and costly. Of the \$3,213,194, expended before the war by the State of Virginia, over \$2,500,000 was consumed in the 22½ miles immediately west of Covington, including the excavation of a double track tunnel 4,800 feet in length at the summit of the main Alleghany chain ; and seven smaller tunnels partially completed. As the whole of this work was available, the line has been recently extended to the celebrated Greenbrier White Sulphur Springs, a favorite summer resort, situated near the line dividing Virginia from West Virginia, distant from Richmond 227 miles, from the Falls of Kanahwa 117 miles, and from the western terminus on the Ohio 200 miles. This was accomplished by the first day of July, 1869, after an expenditure of nearly one million dollars, and the line thereby opened to a very gratifying passenger business.

The line has therefore already pierced the Blue Ridge and Alleghany ranges of mountains, and has emerged upon the slope whose waters run to the Ohio river.

About 14 miles west of the White Sulphur Springs, about \$92,500 had been expended in grading on the Greenbrier section; and on the western section between Charleston and Big Sandy, about \$543,000, or nearly one-third the cost of road-bed. This portion of the work includes a vast amount of embankment, bridge masonry, and excavation, carried out on the most liberal and substantial scale for a double track railroad, nearly all of which will be incorporated in the line as now located.

The estimate of the Engineer, under whom the Covington and Ohio Railroad was being built under State auspices, may be presumed to have been sufficiently liberal. It placed the cost of the 225 miles between Covington and Big Sandy, with masonry and tunnels of double track width, with first class single track super-

structure, at \$11,612,636. Of this amount \$4,300,000 has been expended, so that it will ultimately have that value to its present owners. These estimates were in gold, and are based on the prices of labor and material before the war. During the past two years the line has been carefully re-surveyed, and in some cases improved, and it is the opinion of the Company's Engineer-in-Chief, H. D. Whitcomb, and others, that the line can be carried to the Ohio for less than \$10,000,000, in addition to the amount already expended, notwithstanding the increased cost of labor and material, and establish a first class line of single track railroad—with provision made for a second track at important points—or at an average expenditure of about \$50,000 per mile.

#### *The Shortest Portage between Seaboard and Inland Navigation.*

Students of the physical geography of the continent, will perceive that the most westerly indentation of the Atlantic coast line, north of Cape Hatteras, is found in the James river; Richmond being absolutely the most western limit of Atlantic tide-water navigation.\*

The most easterly limits of the Ohio navigation are found at Pittsburg, and at Cannelton on the Kanahwa; the latter a point nearer to Atlantic tide-water than Pittsburg by 12 miles, and also nearer to Cincinnati, by water, more than 200 miles. The line of railroad between Richmond† and this point on the Kanahwa furnishes the shortest portage between the coast and inland systems of navigation. Barges can transfer their freights to cars at the Falls of Kanahwa whence they are carried to the waters of the Chesapeake by a line 12 to 40 miles shorter than the line between Pittsburg and Philadelphia, and 41 to 70 miles shorter than the line between Parkersburg and Baltimore. At the same time boats can receive at the western terminus of the Chesapeake and Ohio Railroad and carry return freights to Cincinnati

\* Steamers drawing 12 feet of water can land at the docks in Richmond. By a line of 45 miles, West Point is reached, with 20 feet of water; by a line of 25 miles, City Point, with 20 feet; and, by a line of 70 miles, Newport News, where 22 feet are found. There is nearly constant bay and canal communication between Richmond, Baltimore, Philadelphia and New York.

† It is in contemplation to build a short line between Charlottesville and Richmond, for which surveys have been made, which, together with curtailment at other points, would reduce the distance between the East and West terminus 27 miles. See table, page 12.

and all points on the Mississippi by a course 350 miles shorter than boats loading at Pittsburg, and 250 miles shorter than the course from Wheeling. Whether by continuous railroad line, or combined water and rail, the shortest distance from unfailing coast navigation to the great cities of the Mississippi river system is found on the Virginia line. In other words, *the Chesapeake and Ohio Railroad touches the 16,000 miles of Mississippi system of navigation at its most reliable eastern limit, and thence to the principal Western cities has absolutely the shortest available connecting railroad and water lines.*

The importance of this advantage may be appreciated, when it is known that steamboats loaded at St. Paul, Minn, Fort Benton, Mon., Fort Smith, Ark., Shreveport and New Orleans, La., Tuscumbia, Ala., Nashville, Tenn., Naples, Ills., and intermediate points, can transfer their cargoes to the cars of the Chesapeake and Ohio Railroad at the Falls of Kanahwa\* during the greater portion of the year, or at the mouth of the Big Sandy river nearly all the year round. For the transportation of heavy freight from distant points on the Western rivers to tide-water this is of the utmost importance, as the river navigation is so cheap as to control heavy freights.†

Should the railroads of the West, in time, supersede the river navigation for the transportation of heavy or bulky freights, the line of the Chesapeake and Ohio still remains *the shortest link between the 20,000 miles of western railroads and the Atlantic.*

#### *Advantage of Grades and Operating power.*

Nor is the shortness of the portage its greatest advantage. The line is not only more direct between this great middle belt of cities and the seaboard, but it is also the lightest and most uniform in its grades and curves. The grades on the Chesapeake and Ohio, between its western termini on the Ohio and Clifton Forge, a point 30 miles east of the Alleghany summit—a distance of 236 miles

\* The Cincinnati Packet Steamers ply irregularly to Cannelton, immediately below the Falls of Kanahwa. A chartered Company is already organized and at work deepening the channel of the Upper Kanahwa, so as to render it available for boats of this class at all seasons.

†Average charges on grain by barges on Hudson river, 2.4 mills per ton per mile. Average cost on western rivers, estimated at 5 mills per ton per mile. Average rates on 13 canals 3 1-3 cents per ton per mile. Average expenses on all freights by Erie canal, 5 mills per ton per mile. Average charges by rail 2.50 cents.

—the grades will nowhere exceed 30 feet to the mile. East of Clifton Forge they reach the maximum in crossing the North Mountain Spur, 80 feet in going westward, and 75 feet going eastward. On the Blue Ridge the grade going west once touches 75 feet, and going east, 74 feet (on straight line) for short distances only. The least radius of curvature between Richmond and the White Sulphur is 1,442 feet.

The full force of this advantage will be understood when it is explained, that the cost of moving a given weight along a line increases in a constantly accumulating ratio in proportion as the steepness of the grade is increased. For example, the motive power which would suffice to draw 307 tons on grades of 10 feet to the mile, would draw only 168 tons upon grades of 50 feet to the mile, or 100 tons on grades of 90 feet to the mile. Or by the method in use among engineers, of equating grades and distances, the line of highest grades is, for the purposes of operation, equal to so much additional length of line, since it requires so much more power to move a given weight a certain distance. Where the grades are unusually high, the loss of operating power is still further increased by the necessity of using additional motive power and service, or by the application of special mechanical contrivances.

By the table hereto \* annexed it will be seen that the shortest line between New York and Lake Erie, by the New York Central line is 440 miles ; and by the Erie Railway 460. While the average grades of the former line are light, yet they occasionally exceed 60 feet ; and on the latter there is a large amount exceeding

\**TABLE showing the comparative distances by rail between Atlantic Ports and Inland River navigation.*

	Miles.
VIA CHESAPEAKE & OHIO RAILROAD.—Richmond to Cannelton*	<b>343</b>
Alexandria or West Pt to Cannelton	<b>356</b>
VIA BALTIMORE & OHIO RAILROAD.—Baltimore to Wheeling.....	<b>379</b>
Baltimore to Parkersburg.....	<b>384</b>
VIA PENNSYLVANIA CENT. RAILROAD.—Pittsburg to Philadelphia.....	<b>355</b>
Pittsburg to New York.....	<b>431</b>
VIA NEW YORK CENTRAL RAILROAD.—Buffalo to New York.....	<b>442</b>
Buffalo to Albany.....	<b>298</b>
VIA ERIE RAILWAY.....	<b>460</b>
Dunkirk to New York.....	<b>432</b>
Buffalo to New York.....	<b>432</b>

\* Head of navigation on the Kanawha. See note, page 11.

75 feet per mile. By the Pennsylvania line, the distance between tide-water and the intermittent navigation of the Ohio at Pittsburg, (where for a full third of the year the boats are impeded by drouth, and during another third by ice and frost), the distance by railroad is 355 miles, and involves heavy grades, exceeding in some instances, 90 feet per mile for many continuous miles. The same disadvantages apply with equal or greater force to the Baltimore and Ohio railroad line, which consumes 379 miles in reaching the Ohio at Wheeling, and 384 miles at Parkersburg, where the river navigation is scarcely improved, and which involves continuous stretches of high grades, rising to 116 feet to the mile and upwards. The gradient of the Chesapeake and Ohio will average 50 per cent lighter than that of the Baltimore and Ohio, and 30 per cent lighter than that of the Pennsylvania line, so that whether we compute by absolute linear measurement, or by equivalent grades and distances, *the Chesapeake and Ohio is in both respects, the shortest line*; and as certainly as the existence of the law of gravitation can be more cheaply operated.

It is probable, indeed, that the enormous traffic seeking an outlet to the seaboard will induce the Company to construct a separate double track for freighting purposes. By carrying an Eastern Fork of the line from Clifton Forge, 191 miles west of Richmond, down the valley of the James river, which could be done at small cost, and for which authority is granted, tide-water could be reached by a short line having but a single summit elevation, and with grades in either direction not exceeding 30 feet per mile between the Ohio and the Chesapeake navigation. This would give them possession of not only the nearest, but also incomparably the easiest and cheapest line between the Atlantic and the Great West.

#### ***Transportation of Western Products to Seaboard.***

A short line, low grades, light curves, and a genial climate must exert a powerful influence in drawing to the Chesapeake and Ohio Railroad line its full proportion of the through traffic. It is nearer the fields of production, it can carry freights cheaper and with more certainty, and can land them on the Atlantic cheaper than any of its competitors. Estimating the difference in length, grades and curves between the several lines between the great west

and the seaboard, it is apparent that the Virginia line can convey the products from common points in the interior to common points on the seaboard, including New York, at rates fully twenty-five per cent. cheaper than those charged by the more northern lines. This is a vast sum to be saved, and cannot fail to divert of this business all that the capacity of the new line will accommodate.

The difference of 10 cents per barrel on flour, between Chicago and the seaboard, has, within a year, caused an immense quantity to be carried to its port of shipment over the Baltimore and Ohio Railroad. The following extract from the Report of the Committee of the National Board of Trade, at its meeting in 1869, gives as, nearly as may be, the present condition of the East and West lines of transportation :

"To show the inadequacy of the present means of outlet for transmitting such a volume of produce as would be spared for market, we may estimate the maximum theoretic capacity of the Erie canal for through produce at seven millions of tons; we may estimate the utmost capacity of all the railroads now leading across the Alleghanies at eight millions of tons, for *through freights*. It would be safe to estimate the amount of western produce which now goes out by the channels of the St. Lawrence and the lower Mississippi, at four millions of tons. (The capacity of the lower outlets of the Mississippi and of the St. Lawrence for discharging produce, is, of course, not measured by the quantity actually going out, but rather by the capacity of existing appliances for its shipment.) Thus, the utmost theoretic capacity of these several avenues of outlet does not exceed 19,000,000 of tons. The quantity of western through tonnage *actually* moving over them is but little more than half this amount. Yet the present tonnage which could be spared by the West, and which could be forwarded to market, if its products were mobilized by cheap carriage, and by ample avenues of transportation, would be twenty-five millions of tons. (See article I, Hunt's Magazine for August, 1868.) It is not therefore merely a question, whether we shall add new railroads to those already engaged in the work, or whether we shall merely open new canals, or whether we shall merely increase the appliances necessary for transmitting produce through the lower Mississippi and the Gulf. Resort must be had to all these expedients, and still there will be a grievous deficiency in the means of conducting the vast transportation."

These figures may seem too high, but even they leave out of account the effect which lower rates of transportation would have upon increasing shipments. There is little doubt, from past experience, that if the charges should be reduced twenty-five per cent., the amount of produce, etc., available for shipment would be increased more than twenty-five per cent., and so on, in greater ratio, for further reductions.

The four trunk lines between the seaboard and the west, according to the latest statistics, carried, both ways, an aggregate of

more than 12,000,000 tons of freight in a single year, exclusive of that carried by the Erie Canal. What proportion of this was through freight cannot be definitely ascertained, but on three of them, at least, the amount was a large proportion of the entire traffic. Estimating, by the basis of some of the lines, the through freight at only a fourth of the whole, it would give an aggregate of 3,000,000 tons per annum, with an equal sum upon the canal, to be transported between the seaboard and the west. Allowing only a fifth part of this immense tonnage, or say, one million of tons per annum, at the rate of two cents only per ton per mile\* for an average distance of 400 miles, this would give to the Chesapeake and Ohio a revenue of \$8,000,000 from this source alone. This rate, however, is fully 25 per cent. less than the average charges at present.

#### ***Passenger Traffic between Washington and the West.***

Similarly, the short line, easy grades and more favorable winters enable the Chesapeake and Ohio line to run their passenger trains between common points at the West, South and Southwest and the City of Washington—and even points north of it—with greater speed and safety. The passenger traffic on the Washington branch of the Baltimore and Ohio Railroad, as is well known, is enormous—that being, hitherto, the principal approach to the National Capital from the West, as well as from the North. From that point to Gordonsville, on the Chesapeake and Ohio Railroad, is but ninety-six miles over an excellent line of road. The Virginia line is actually the shortest route of road between Washington City and Cincinnati, Louisville, St. Louis, Memphis and Nashville in miles, and, equating grades, is nearer also to Chicago. The following table will show the actual saving in distance between those points and Washington, showing a gain of thirty-one miles to Cincinnati; seventy-four miles to Louisville; thirty-one miles to St. Louis; seventy-four miles to Memphis, and seventy-four miles to Nashville, over the more northerly routes.

---

\* The average charges on the Michigan Southern for several years were from 2.10 to 2.90 cents per ton per mile. On the Pennsylvania road, fuel and general freight averaged in 1868, 1.906 cents per ton per mile. On the Illinois Central the rate varies from 1.95 cents (gold) to 3.19 cents per ton per mile. On the Chicago and Rock Island Railway the average was from 2.58 to 3.50 cents per ton per mile. Average on Pittsburgh and Port Wayne, from 1.70 to 2.44 cents per ton per mile.

TABLE showing the distances between Washington and Western Cities over the Chesapeake and Ohio, and Maryland and Pennsylvania routes.

Distance from Washington, via	To Cincinnati	To Chicago,	To Louisville.	To St. Louis.	To Memphis.	To Nashville.
CHESAPEAKE & OHIO RAILROAD	582	866	646	922	1,023	831
BALTIMORE & OHIO do.	613	852	720	953	1,097	905
PENN. CENTRAL do.	646	842	753	989	1,130	938

Among the roads, already building or projected, which will connect with the Chesapeake and Ohio at the West, are the *Lexington and Big Sandy Railroad*, (125 miles,) which will furnish a short line to Louisville, via Lexington ; the *Lexington, Elizabethtown and Paducah Railroad*, affording a short route to Nashville, Memphis and Cairo : the *Cincinnati, Maysville and Big Sandy*, connecting the lines centering at the former city, by a line of 135 miles from the mouth of the Big Sandy ; the *Columbus and Hocking Valley Railroad*, which will connect with the Chesapeake and Ohio at Point Pleasant ; and the *Scioto Valley*, which will also connect Columbus and the Ohio lines, via Portsmouth.

When the Chesapeake and Ohio shall have perfected its main line,\* and its western connections are established, it is not too much to say, that in view of its other advantages, it would be enabled to compete on equal terms with the rival lines for the Western passenger traffic, as well as the freight, to and from New York. It will be, manifestly, in the power of the company to offer both to shippers and passengers such inducements as would give their road all the business it may be advisable to add to the more profitable, important local traffic awaiting its completion.

We may add to these advantages, the fact that the route of the Chesapeake and Ohio is unsurpassed in attractions of scenery by any road on this side of the Sierra Nevada Mountains ; its course on both slopes of the Alleghany chain is picturesque beyond even

\* The route of the Orange and Alexandria road from its intersection with the Chesapeake and Ohio is also favorable to a direct line and low grades, and under a consolidated management, very quick time could be made between Washington and Cincinnati, and points South and West.

that of the Maryland line. The cañon of New River is a marvel of wild grandeur, unequalled in the Appalachian Range. The White Sulphur Springs must also become a point of great attraction to the inhabitants of the Mississippi Valley, as much from the natural beauty of the place, as for the medicinal properties of its waters.

#### *The Agricultural Resources along the Route.*

Virginia (East and West) embraces 61,352 square miles of territory, or 39,265,280 acres of land, of which in 1860 only 11,435,954 acres were improved, leaving 27,829,326 acres unimproved! The question may be asked—How is it that a State so long settled has so large a portion of her territory unimproved? The question can be easily answered. Most of the unoccupied lands of Virginia were, during the latter part of the last century, taken up in large tracts by speculators, whose successors have since held them. Few inducements were offered to small and actual settlers to purchase lands, and for that reason, together with the presence of slave labor, emigrants from Europe and from the Eastern States have been attracted to the far West, where Government lands could be purchased at low rates and in quantities to suit the purchasers. This order of things in Virginia is now changed. Not only are these vast unoccupied tracts of land placed upon the market in moderate quantities at low figures, but many of the old plantations hitherto tilled by slave labor are being cut up into small farms and cultivated by white labor.

The great strength of the Chesapeake and Ohio Railroad Enterprise rests, however, in its important local traffic. The through business it can share to the extent that is desirable, but the road itself runs through a country of marvellous resources. Between Richmond and Gordonsville is a fine corn and tobacco region. At the latter point it receives the business of the Orange and Alexandria Railroad, which is, in effect, at present a branch line of the Chesapeake and Ohio. The line then crosses the rich Shenandoah Valley by way of Staunton, passing through some of the finest wheat and tobacco districts in Virginia, for both of which the State is without an equal, except possibly California. The one hundred and forty miles between Covington and the Kanawha is one full of attractions for tourists. Its valleys are

mainly cultivated, and the high table lands are well suited for grazing purposes. This district was for many years the best resource of the Virginia armies for cattle and food. At the Kanawha, the line touches the famous "blue grass" region, extending along the foot-slopes of the hills to the central portion of Kentucky. Before the war the number of cattle driven from West Virginia to Baltimore and Philadelphia was very great. This is undoubtedly the best grazing region on this side of the Mississippi, and is much nearer the Atlantic markets than are the famous live stock regions of Kentucky and Illinois.

The land between the Kanawha and the Big Sandy is a rich, undulating country, well settled and improved, and partakes of the same characteristics as the best species of Ohio river bottom lands. The corn crops here are immense. Land is now to be had in Virginia of better quality and at lower prices than it can be found anywhere else east of the Mississippi. The railroad is needed to convey the products of the farmers to market. This completed, these States must start ahead, both in numbers and wealth. These natural advantages, together with the hearty introduction of free schools, and the encouragements to free labor, open to immigration an attractive field for settlement.

#### *Coal, Iron and Salt Deposits.*

But far beyond any of the foregoing advantages in importance, must be placed the valuable deposits of coal, iron, lead, petroleum, salt, etc., which are to be found in close proximity to the road. The whole area of coal deposits in Virginia and West Virginia is estimated at 15,900 square miles, or more than the combined area of Pennsylvania ; embracing every variety, including anthracite, cannel, bituminous and laminated anthracite, or "splint" coal. This latter variety is the more valuable because it is especially in request for smelting ores, being free from sulphur. It is found at but two or three other places in the United States, and at those in limited quantities only. On the banks of the Kanawha it is found in immense quantities, and at points convenient to the railroad. Hardly less valuable are the vast deposits of cannel coal which are found contiguous to the splint strata. This coal, which is so largely in use for gas manufacturing purposes, and of which 300,000 tons were yearly im-

ported from abroad, is sold in New York at from \$15. to \$22. per ton.

This precious deposit, like the other varieties, can be mined in limitless quantities at \$2.00, per ton, allowing for transportation to Richmond, two cents per ton, per mile, or \$7.00 per ton, it is evident, that coal could be laid down at tide water for \$9.00, and in New York for \$11.00. It is believed, however, that coal could be carried at a profit over the light grades for one and one-third cents per ton per mile, or \$5.00 per ton, from the mines to Richmond. The Baltimore and Ohio Road is carrying coal over 116 feet grades for less than two cents per ton per mile, and over the 70 feet grades between Cumberland and Baltimore, for one and one-third cents per ton per mile.

In like manner, the coal traffic from the Kanawha mines to points westward promises to be important. Very frequently, by reason of insufficient water, the coal barges from the Pittsburg district are unable to proceed to the lower Ohio and Mississippi, and at other times vast quantities are lost by floods and by ice. Scarcity and high prices are then felt all along the navigable rivers. It will be practicable for the Chesapeake and Ohio to deliver the Kanawha coal at all seasons, either at the better navigation of the Ohio, below the Guyandotte tributary, or to forward it direct to Cincinnati, Louisville, Nashville, Memphis and intermediate points, at rates not appreciably greater than the average charges involved by the river transit.\*

Coal has been said by a great statesman to be at the foundation of the great wealth and power of the British Empire. Coal has enriched and populated a large part of Pennsylvania, conferring a value on her rugged hillsides far greater than that of her most fertile plains. Virginia, like Pennsylvania, has both coal and iron deposits of vast extent, which have been hitherto unknown or neglected. On the line of the Chesapeake and Ohio from Staunton to Covington, are found inexhaustible beds of the finest iron ore, situated about 200 miles distant from the coal beds of the Kanawha. Iron ore is also found in the New River, Upper Kanawha Valley, within 50 miles of the coal fields.

To unite the coal of one slope of the Alleghanies with the iron

---

\* Coal is offered, delivered on the cars, at the Kanawha mines at seven cents per bushel, or \$1.96 per ton. The price of ordinary bituminous coal, at the Ohio River landings, not unfrequently reaches fifteen to thirty cents per bushel, — \$4.20 to \$8.40 per ton.

of the other, and *vice versa*, must be one of the great functions of the Chesapeake and Ohio. These several valuable deposits will be connected by a line of 200 miles of railroad, whereon cars will pass loaded with ore, and returning with coal to the great factories which must hereafter spring up at both ends of the line to supply the demands of the Atlantic slope and the great west. Already the iron ores of Lake Superior, Missouri and Pennsylvania are being brought together at Pittsburg, and other points on the Ohio river, for the fusion of a more perfect metal. The ores of Virginia possess qualities which are in great request for mixing with other ores\*. The new line of railroad will afford unsurpassed facilities, by combining its peculiar coal and ores, for the building up of an immense iron manufacture on the navigation of the Ohio and on that of the Chesapeake. The business and profits to be derived from this source, it would be difficult to estimate too highly.

Limestone and lead ores are also found in abundance on both slopes of the mountains. In the Kanawha valley at this time are several salt manufactories. This branch of trade can be expanded indefinitely, as the coal is found adjacent to the salt springs. The climate, soil and general healthfulness of the belt of country of which the railroad must be the principal outlet, are exceedingly well adapted to a dense and busy population. A new and thrifty centre of industry must, by the force of these elements, arise on the western portion of this line, which may in time overshadow any of the present cities of the Ohio valley.

#### *Growth and Influence of Railroads.*

Of the value and advantages of railroads in a community there is no dispute. Something of their influence may be discerned in the unparalleled growth of the Western States, and in the prodigious efforts which are being made to extend their railroad system. It is no longer deemed necessary to wait for a particular district to be settled before running railroads through it; the roads are first built, and the region more easily settled thereby. The roads create

---

\* The cost of manufacturing one ton of pig iron, as given by reliable authority, at Cincinnati is \$28 50; at Jackson, near the Ohio River \$28 00; at Allentown, Pa., about \$20 00; and at points along the route, after the Chesapeake and Ohio line is opened to the Kanawha, at \$12 00. Both magnetic and hematite ores are found along the head waters of the James River.

the traffic which is afterward to yield the profits of their enterprise. This policy has proved so successful, that the railroads beyond the Mississippi are being pushed ahead of the immigration, and, at the present ratio of increase, the Western States will have more miles of railroad in proportion to their population, than any other part of the country.

Classifying the States into five groups, viz: New England, Middle, Western, Southern and Pacific States, we have the following instructive statistics :

From the close of 1865 to the close of 1868, the increase in railroad mileage in the six New England states was 175 miles ; in the six Middle states, 226 miles ; in the ten Southern states, 1,061 miles ; in the ten Western states, 4,042 miles ; and in the three Pacific states, 656 miles. Massachusetts had the greatest ratio to its area, or 1 mile of railroad to 5.47 of area ; Connecticut 1 to 7.34 ; New Jersey 1 to 8.55 ; New York 1 to 14.12 ; Pennsylvania 1 to 10.46 ; Ohio 1 to 11.76 ; Indiana 1 to 13 ; Illinois 1 to 16.11 ; and even South Carolina 1 to 27.31 square miles; while Virginia had only 1 to 27.94 of area, and Kentucky 1 to 46.25 miles. Virginia and Kentucky, two of the most favored of nature, are deficient in railroad mileage as compared with area, far beyond their natural position. A glance at the map will show that there is no equal area of fertile territory east of the Mississippi in which the railroads are so deficient as that between the Baltimore and Ohio, and the East Tennessee lines.

The district, (26 counties,) tributary to the Chesapeake and Ohio line contained, by the census of 1860, a population of 321,400. Counting the region traversed by the extensions to Lexington and Cincinnati, it is capable of supporting a population of three millions.

When we remember that the Virginia territory received the earliest European settlements on the North American continent ; and that for half a century Virginia remained the most populous, wealthy and influential State of the Union—her relative deficiency in works of internal improvement, at this day, is apparent. If we consider also her unrivalled harbors and seaboard lines, her varied and fertile soil and mineral treasures, her genial climate and perennial streams, whereon the ice formation seldom exceeds an inch in thickness, and where the snow-fall is so slight as to present no obstacle to travel and transportation—her op-

portunities for rapid and prosperous developement and for profitable railroad enterprise are without parallel in the country.

### *The Oppressive Tax upon East and West Traffic.*

We have thus far considered the amount of freight seeking transport from the west to the east, and from the east to the west, according to its present proportions. It is necessary to rise to the full comprehension of the fact that *this interchange of products is merely in its infancy!* Statistics show that production keeps pace with the increase of railroads, but in a constantly increasing ratio. It is shown\* that, while in the Western States the railroad mileage has doubled, the tonnage thereon has more than quadrupled.

Both these processes are now at work on an unexampled scale in our country, and it would be hazardous to set the dimensions of the east-and-west trade ten years hence. It is certain that then, as now, commerce will be seeking new channels. The existing ones are already overtaxed, and keep the rates of transportation at the maximum limit. The amount of produce shipped, and the corresponding amounts of merchandise consumed by the West are already depressed and fettered by the high charges imposed upon their transportation. With every reduction of rates the amount shipped increases in even greater proportion. Although the average of railroad transportation charges has been steadily decreasing, the impression is general at the West that they are still far too high. This conviction is seeking expression in the efforts to build an additional canal round Niagara Falls, and to ship breadstuffs down the Mississippi, and, by way of the Gulf, to Europe. While the former project is embarrassed by the shortness of the season of navigation, it is said that this latter experiment is confronted by a natural objection, in the liability of the grain and flour to damage while passing through the warm waters of the tropics. A new outlet to the Atlantic has become a positive necessity of the time, and this is afforded, under the most favorable conditions, by the route of the C. & O. R. R.

---

\* In the State of New York, during the ten years from 1858 to 1868, the increase in equivalent single track was 79 per cent., while the increase in tonnage was 345 per cent. See table of *Western roads*, page 27.

It will be seen\* that the Capital and Debt of the four great lines between the Atlantic and the Mississippi amounts to more than \$500,000,000. Two of these lines, having together about one thousand miles of main line within the limits of the state of New York, are represented by a capital and debt charge of \$300,000,000. So of their extensions in Ohio and westward, the inflation of their stock and debt accounts has gone far beyond the cost and value of the lines. To pay dividends and interest on these "watered" liabilities amounts to an onerous tax upon the traffic passing over them. So great is the power of these corporations, that it would be difficult, and perhaps impossible, to construct rival lines through either Maryland, Pennsylvania, or New York, even if a feasible route could be found. The farmers of the Western, and the consumers of the New England States, are taxed to contribute the dividends upon this enormous amount of capital. In other words the internal commerce of the country has risen to such proportions, that it confers a value in productive power upon East and West trunk lines of railroad, far beyond their original cost. The rich and powerful companies who now control the other available avenues, will not, of course, permit, without strenuous opposition, new and competing lines to be built up within the limits of the three States above-named. Recourse must therefore be had to the line passing through Virginia, even if it was a less favorable route. Fortunately, however, this line is the one which combines the greatest advantages for railroad construction and operation.

#### *Advantageous Financial Position of the Virginia Line.*

It is a promising feature of the Chesapeake and Ohio Enterprise that it will be burdened with a debt charge very light in contrast with the more northerly lines; and comparatively insignificant, as compared with the cost of the property and its earning power. The very favorable terms upon which the Company acquires the ownership of all the work done by the State—the cost of which exceeds \$5,000,000, gold value—enables it to enter the field with a most valuable franchise, an exceedingly profitable line of road, and inconsiderable obligations. The line has been thus

---

\*See table, page 26.

far operated for about 50 per cent of the receipts; and with the exception of some of the years covered by the war, paid out of its earnings a dividend upon its capital, in addition to the regular interest upon its Bonded debt. There are few, if any, Trunk lines in the country which will command the same traffic; none where the elements of cheap operation are more accessible, and none where the revenues are more certain.

The subscriptions to the capital stock of the company, both by the State and the several Counties through which the line passes, and by private parties, have enabled them to keep their funded debt within the most moderate limits.

The subjoined statement shows the condition of the Company's Funded and Floating Debt on the 30th September, together with an estimate of its condition after the road is completed, and the value of the same, exclusive of franchises, right of way, &c.

#### PROPERTY AND ASSETS.

Cost of road and buildings between Richmond and White Sulphur Springs.....	\$9,027,338
Equipments, &c. ....	660,641
Real Estate in Richmond.....	34,693
Interest in Blue Ridge tunnel.....	1,500,000
Work between White Sulphur Springs and Big Sandy.....	1,534,693
Stocks, bonds and accounts.....	635,776
	97,500
Cost of road, &c., mainly before the war, in gold.....	\$11,955,948
PRESENT VALUE OF THE PROPERTY, at least.....	<b>\$15,000,000</b>

#### FUNDED AND FLOATING DEBT.

Bonds.....	\$1,799,500
Less investment in sinking fund.....	110,743
Unfunded debt, temporary loans, tolls, &c. ....	1,688,757
Temporary obligations.....	677,160
	1,053,793
	<hr/>
	\$3,419,900
Deduct debts due the Company, and cash on hand.....	131,206
Total funded and floating debt, Sept. 30th, 1869,.....	\$3,288,692

#### *Extension to the Ohio.*

Arrangements have been concluded during the past year, whereby, through the coöperation of prominent and influential New York Capitalists, the *Chesapeake and Ohio Company* will prosecute the work upon the unfinished portion of the line with increased vigor. That part of the road between the Kanahwa coal

fields and the western terminus on the Ohio River, (seventy-five miles,) being in good part graded, can be completed and put in running order, within the current year. This will give an additional stimulus to the connecting lines now constructing in Central Kentucky and Ohio. The heavier items of the work on the New River section, between Kanahwa and White Sulphur Springs, can, meantime, be put under contract; and by the close of 1871, if not sooner, the whole line to the Ohio be brought into full operation.

The condition of the Company's finances, as reflected in the above table, is unusually favorable for the prompt completion of the work, and for the economical and profitable working of the road after completion.

**APPROXIMATE STATEMENT showing the length of Main Line, Capital and Debt, Business and Expenses of leading Trunk Lines between Western Cities and tide water, for the year last published.**

	Line of Road.	Miles, Main Line.	Capital Stock.	Interest Bearing Debt.	Passengers.	Transportation.		Gross Earnings.	Ratio of Earnings to Exp.
						Tons.	Carried.		
<b>New York</b> to <b>Chicago.</b>	<b>N. Y. Central and Hudson,</b> .....	442	\$45,000,000	\$77,932,940	3,679,318	2,762,762	\$20,055,578	64.4%	
	<b>Lake Shore and Mich. South,</b> .....	538	35,000,000	18,225,000			12,280,530	60.	
<b>New York</b> to <b>Chicago.</b>	<b>Pennsylvania Central,</b> .....	980	\$80,000,000	\$77,157,900			\$22,335,048		
	<b>Pittsb'k, Ft. Wayne and Ohio,</b> .....	355	\$27,040,000	\$21,286,132	3,747,178	4,729,015	\$17,223,497	68.	
<b>New York</b> to <b>Chicago.</b>	<b>New Jersey R. R., (C. and A.)</b> ,.....	468	11,500,000	12,563,000			8,041,181	60.	
		95	6,250,000	850,000			5,103,805		
<b>New York</b> to <b>Cincinnati.</b>	<b>Erie, Railway, (to Sal.)</b> .....	918	\$44,790,000	\$43,679,132			\$30,378,483		
	<b>Atlantic and Great Western,</b> .....	415	\$66,302,210	\$23,398,000	2,194,348	3,948,243	\$14,376,372	72.43	
<b>Baltimore</b> to <b>Cincinnati.</b>	<b>Cincinnati, Hamilton and Dayton,</b> .....	387	27,798,000	30,000,000			4,846,047	61.69	
		60	3,500,000	2,004,000			1,132,194		
<b>Baltimore</b> to <b>Cincinnati.</b>	<b>Baltimore and Ohio to Parkersburg,</b> .....	867	\$97,500,210	\$55,402,040			\$20,354,613		
	<b>Marietta and Cincinnati,</b> .....	384	\$16,123,700	\$9,543,680	2,194,348	1,575,561	\$8,698,425		
		207	14,620,365	6,306,000			1,284,086		
		591	\$30,754,065	\$15,849,680			\$8,992,580		

**APPROXIMATE STATEMENT showing the estimated length of Main Line, Capital and Debt, Business and Expenses of the Chesapeake and Ohio route between tide water and Cincinnati.**

<b>Richmond</b> to <b>Cincinnati.</b>	<b>Chesapeake and Ohio,</b> .....	427	\$10,596,000	\$15,288,692				
	<b>Cincinn'ti, May've and Big Sandy</b> .....	135	5,000,000					\$10,000,000 50.
		562	\$15,596,000					

*STATEMENT Showing the Number of Miles of Railroad in the Eight North-Western States in 1850, 1860 and 1867, respectively, with the Number of Tons of Freight Carried on the same, with the Value of such Tonnage, at \$150 per ton; the population of said States and the Census Valuation of the same for 1850 and 1860 respectively.*

STATES.	Miles of Railroad in Operation.	Tons of Freight Carried.		Population.	Valuation.		
		Value of Freight to \$150 per ton.					
		1850.	1860.				
		Estim't'd at 1,500 t'ns p. m. of road.	1867.	1850.	1860.		
		Estim't'd at 600 t'ns per mile of road.	1860.	\$25,875,000	\$764,350,000		
		Estim't'd at 300 tons per mile of road.	1850.	5,097,000	1,980,389		
Ohio .....	575 2,946	172,500	1,767,600	10,980,000	9,339,511		
Indiana .....	326 2,163	63,400	1,297,800	4,458,000	518,850,000		
Michigan .....	349 779 1,463	102,600	467,400	2,194,500	194,070,000		
Illinois .....	111 2,759 3,324	33,300	1,678,400	4,836,000	329,175,000		
Wisconsin .....	20 905 1,036	6,000	543,000	1,554,000	81,450,000		
Iowa .....	655 1,983	.....	383,000	1,924,500	38,050,000		
Minnesota .....	482	.....	723,000	.....	108,450,000		
Missouri .....	817 985	.....	490,300	1,477,500	73,530,000		
Total .....	1,976 11,064 14,177	382,800	6,638,400 21,985,500	\$57,420,000	\$905,700,000		
				\$1,139,885,000	\$1,403,585		
				\$1,139,709,647	\$1,925,927		
				\$1,139,709,647	\$1,925,927		

**APPROXIMATE STATEMENT showing the length of Main Line, Capital and Debt, Business and Expenses of  
lending Trunk Lines between Western Cities and tide water, for the year last published.**

Line of Road.	Miles, Main Line.	Capital Stock.	Interest Bearing Debt.	Passengers.	Transportation Tons Carried.	Gross Earnings.	Ratio of Earnings to Exp.
New York { N. Y. Central and Hudson, .....	442	\$45,000,000	\$77,932,900	3,679,318	2,762,762	\$20,055,578	64. <sup>43</sup>
to Chicago. { Lake Shore and Mich. South, .....	538	35,000,000	18,225,000			12,280,530	60.
	980	\$90,000,000	\$97,157,900				
New York { Pennsylvania Central, Pittsb <sup>g</sup> , Ft. Wayne and Ohio, .....	355	\$27,040,000	\$21,266,132	3,747,178	4,722,015	\$17,923,497	68.
to Chicago. { New Jersey R. R., (C. and A.) .....	468	11,500,000	12,563,000			8,041,181	60.
	95	6,250,000	850,000			5,103,805	
	918	\$44,790,000	\$43,679,132				
New York { Erie, Railway, (to Sal.) .....	415	\$66,302,210	\$23,398,000	2,194,348	3,908,243	\$14,376,372	72. <sup>43</sup>
to Cincinnati. { Atlantic and Great Western, .....	387	27,798,000	30,000,000			4,846,047	61. <sup>69</sup>
	60	3,500,000	2,001,000			1,132,194	
	867	\$97,500,210	\$55,402,000				
Baltimore { Baltimore and Ohio to Parkersburg, .....	384	\$16,123,700	\$9,543,680	2,194,348	1,575,561	\$8,698,425	
to Cincinnati. { Marietta and Cincinnati, .....	207	14,620,365	6,306,000			1,294,085	
	591	\$30,754,065	\$15,849,680				

**APPROXIMATE STATEMENT showing the estimated length of Main Line, Capital and Debt, Business and Expenses of the Chesapeake and Ohio route between tide water and Cincinnati.**

Richmond { Chesapeake and Ohio, .....	427	\$10,596,000	\$15,288,692				
to Cincinnati, Mayville and Big Sandy .....	135	5,000,000					
Cincinnati. {	562	\$15,596,000					

*STATEMENT Showing the Number of Miles of Railroad in the Eight North-Western States in 1850, 1860 and 1867, respectively, with the Number of Tons of Freight Carried on the same, with the Value of such Tonnage, at \$150 per ton; the population of said States and the Census Valuation of the same for 1850 and 1860 respectively.*

STATES.	Miles of Railroad in Operation.		Tons of Freight Carried.		Value of Freight to \$150 per ton.		Population.		Valuation.	
	1850.	1860.	1850.	1860.	1857.	1860.	1850.	1860.	1850.	1860.
Ohio .....	575	2,946	3,398	172,500	1,767,600	5,097,000	\$25,875,000	\$625,140,000	\$764,530,000	\$2,330,511
Indiana .....	928	2,163	2,306	63,400	1,397,800	3,459,000	10,360,000	194,970,000	518,850,000	988,416
Michigan .....	342	779	1,463	103,600	467,400	2,184,500	15,380,000	70,110,000	329,175,000	387,654
Illinois .....	111	2,799	3,224	33,300	1,679,400	4,826,000	4,995,000	931,910,000	725,400,000	1,710,951
Wisconsin .....	20	905	1,036	6,000	543,000	1,554,000	900,000	81,450,000	523,100,000	345,391
Iowa .....	655	1,983	.....	383,000	1,124,500	.....	.....	58,950,000	388,675,000	192,214
Minnesota .....	.....	483	.....	.....	723,000	.....	.....	108,450,000	6,071	172,183
Missouri .....	.....	817	985	.....	490,900	1,477,500	.....	73,530,000	581,625,000	682,044
Total .....	1,976	11,064	14,177	362,800	6,638,400	921,265,500	\$67,120,000	\$935,700,000	\$3,130,865,000	5,403,565
										\$1,935,927
										\$3,930,276,796





*C. & O. H.*

STANFORD UNIVERSITY LIBRARY

To avoid fine, this book should be returned on  
or before the date last stamped below



Photomount  
Pamphlet  
Binder  
Gaylord Bros.  
Makers  
Syracuse, N. Y.  
PAT. JAN. 21, 1908

Stanford University Libraries



3 6105 024 654 969

STANFORD UNIVERSITY LIBRARIES  
STANFORD AUXILIARY LIBRARY  
STANFORD, CALIFORNIA 94305-6004  
(650) 723-9201  
salcirc@sulmail.stanford.edu  
All books are subject to recall.  
DATE DUE

JUN 10 2002  
JUN 11 2002

DO NOT CIRCULATE  
RENT FROM LIBRARY

